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CRICKETS (ORTHOPTERA: GRYLLIDAE) OF THE YANG COUNTY, SHAANXI PROVINCE OF CHINA

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Summary. An annotated list of 23 species of Gryllidae from Yang County of Shaanxi province, China is given. Sixteen species are recorded from this county for the first time, of them three species are new for Shaanxi province. *Qinggryllus* Chen et Zheng, 1995, **nom. resurr.** is considered as distinct genus. New synonymy is established: *Turanogryllus eous* Bey-Bienko, 1956 = *Turanogryllus melasinotus* Li et Zheng, 1998, **syn. n.**

Key words: crickets, Eneopterinae, Euscyrtinae, Gryllinae, Oecanthinae, Podoscirtinae, Trigonidiinae, Nemobiinae, fauna, new records, Qinling Mountains, China.

Ч. Ян, Ц. Д. Вэй, Т. Лю, Х. Ю. Лю. Сверчки (Orthoptera: Gryllidae) уезда Ян провинции Шэньси, Китай // Дальневосточный энтомолог. 2019. N 376. С. 15-22.

Резюме. Приводится аннотированный список 23 видов сверчков фауны уезда Ян в провинции Шэньси (Китай). Впервые для этого уезда указываются 16 видов, из которых 3 вида впервые найдены в провинции Шэньси. *Qinggryllus* Chen et Zheng, 1995, **nom. resurr.** рассматривается в качестве самостоятельного рода. Установлена новая синонимия: *Turanogryllus eous* Bey-Bienko, 1956 = *Turanogryllus melasinotus* Li et Zheng, 1998, **syn. n.**

INTRODUCTION

Yang County is a county in Hanzhong, Shaanxi Province, China. It is located in the Qinling Mountains, a major east-west mountain range in southern part of Shaanxi. The mountains provide a natural boundary between North and South China and support a huge variety of insects (Yang, 2005; 2018). Qinling mountains is one of the priority areas for conservation of biodiversity in China (Li *et al.*, 2016).

The only seven species of crickets has been recorded from Yang County (You *et al.*, 1997; Lu *et al.*, 2018). In present paper a list of 23 species and subspecies of Grylloidea is given based on specimens collected mainly by Hao-Yu Liu (HYL) in Yang County in 2016–2017 from follow localities: vicinity of Huashuguan Town: Suwang Village, 33°19'52"N, 107°43'22"E, 790 m; Chenjiaping Village, 33°18'45"N, 107°42'19"E, 724 m; vicinity of Huayang Town: Huayangjie Village, 33°35'41"N, 107°31'58"E, 1110 m; Yanfeng Village, 33°37'11"N, 107°22'46"E, 985 m; Yangjiagou, 33°38'21"N, 107°29'44"E, 1315 m; Tianxing

Village, 33°40'32"N, 107°20'56"E, 923 m; Qingxi Village, 33°37'18"N, 107°19'5"E, 854 m; vicinity of Yishui Town: Yaoshuba Village, 33°13'10"N, 107°30'2"E, 600 m; Yaoping Village, 33°26'30"N, 107°21'42"E, 902 m; Mujia Village, 33°23'35"N, 107°28'33"E, 690 m; Miaoya Bridge, 33°21'28"N, 107°21'35"E, 723 m; vicinity of Changxi Town: Caihe Village, 33°16'3"N, 107°40'3"E, 538 m; Laqigou Village, 33°20'22"N, 107°42'35"E, 987 m; vicinity of Guandi Town: Daxigou Village, 33°28'13"N, 107°25'48"E, 983 m; vicinity of Jinshui Town: Guanling Village, 33°17'14"N, 107°52'45"E, 712 m; Sangxi Town: Shuanglong Estuary, 33°16'44"N, 107°53'16"E, 712 m; vicinity of Maoping Town: Jiuchi Village, 33°34'60"N, 107°41'7"E, 1181 m; Chaoyang Village, 33°31'22"N, 107°40'9"E, 911 m; Shaojiagou Village, 33°31'22"N, 107°40'9"E, 912 m. New records from Yang County are asterisked (*); new for Shaanxi province taxa are double asterisked (**).

LIST OF SPECIES

Family Gryllidae Laicharting, 1781

Subfamily Euscyrtinae Gorochov, 1985

**Euscyrtus (Osus) hemelytrus* (Haan, 1844)

MATERIAL EXAMINED. **Shaanxi Province**: Suwang Village, taken by net, 11.VIII 2017, 2♂, 2♀ (HYL).

DISTRIBUTION. China (Shaanxi, Jiangsu, Zhejiang, Fujian, Jiangxi, Shandong, Hunan, Guangxi, Hainan, Sichuan, Guizhou, Yunnan). – Japan, Korea, Indonesia, Malaysia.

Subfamily Gryllinae Laicharting, 1781

**Goniogryllus atripalpus* Chen et Zheng, 1996

MATERIAL EXAMINED. **Shaanxi Province**: Yanfeng Village, pitfall trap, 06.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (endemic to Shaanxi Province).

**Goniogryllus ovalatus* Chen et Zheng, 1996

MATERIAL EXAMINED. **Shaanxi Province**: Yangjiagou, taken by net, 05.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Gansu).

NOTES. This species was firstly recorded from Shaanxi Province by Xie (2005).

**Gryllodes sigillatus* (Walker, 1869)

MATERIAL EXAMINED. **Shaanxi Province**: Tianxing Village, taken by net, 06.VIII 2017, 1♀ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Liaoning, Heilongjiang, Shanghai, Jiangsu, Anhui, Fujian, Jiangxi, Shandong, Hunan, Guangdong, Guangxi, Hainan, Guizhou, Yunnan); Japan, Korea, India, Pakistan, Bangladesh, Malaysia; America; Australia; Africa.

**Loxoblemmus detectus* (Serville, 1838)

MATERIAL EXAMINED. **Shaanxi Province**: Yaoshuba Village, light trap, 02.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Guangxi, Sichuan, Guizhou); Pakistan, Indonesia.

***Loxoblemmus doenitzii* Stein, 1881**

MATERIAL EXAMINED. **Shaanxi Province:** Caihe Village, light trap, 10.VIII 2017, 1♂, 2♀ (HYL); Chenjiaping Village, light trap, 09.VIII 2017, 2♀ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Hebei, Shanxi, Liaoning, Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Shandong, Henan, Hunan, Guangxi, Sichuan, Guizhou); Japan, Korea.

NOTES. This species was recorded from Yang County by You *et al.* (1997).

***Loxoblemmus egrestris* Saussure, 1877**

MATERIAL EXAMINED. **Shaanxi Province:** Caihe Villagee, light trap, 10.VIII 2017, 1♂, 3♀ (HYL); Yaoshuba Village, light trap, 02.VIII 2017, 2♂ (HYL); Huayangjie Village, taken by net, 05.VIII 2017, 1♀ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Liaoning, Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Hubei, Hunan, Guangxi, Hainan, Sichuan, Guizhou, Yunnan, Xizang); Korea, Japan, India, Myanmar, Sri Lanka, Malaysia, Indonesia.

NOTES. This species was recorded from Yang County by You *et al.* (1997).

***Loxoblemmus haanii* Saussure, 1877**

DISTRIBUTION. China (Shaanxi, Zhejiang, Guangxi, Yunnan, Taiwan); Vietnam, Malaysia.

NOTES. This species was recorded from Yang County by You *et al.* (1997).

****Loxoblemmus taicoun* Saussure, 1877**

MATERIAL EXAMINED. **Shaanxi Province:** Daxigou Village, light trap, 27.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Guangxi, Taiwan); Japan.

*****Tarbinskiellus portentosus* (Lichtenstein, 1796)**

MATERIAL EXAMINED. **Shaanxi Province:** Jiuchi Village, taken by net, 08.VIII 2017, 1♂, 1♀ (HYL).

DISTRIBUTION. China (Shaanxi, Fujian, Jiangxi, Hainan, Yunnan, Xizang, Qinghai, Taiwan).

***Teleogryllus (Brachyteleogryllus) emma* (Ohmachi et Matsumura, 1951)**

MATERIAL EXAMINED. **Shaanxi Province:** Yangjiagou, light trap, 28.VIII 2017, 3♂ (HYL); Yangjiagou, taken by net, 07.VIII 2017, 4♂, 7♀ (HYL); Yangjiagou, light trap, 04.VIII 2017, 3♂, 1♀ (HYL); Huayangjie Village, taken by net, 05.VIII 2017, 2♀ (HYL); Miaoya Bridge, light trap, 26.VIII 2017, 1♀ (HYL); Chenjiaping Village, light trap, 09.VIII 2017, 1♂, 2♀ (HYL); Yaoshuba Village, light trap, 02.VIII 2017, 1♂, 1♀ (HYL); Caihe Villagee, light trap, 10.VIII 2017, 1♂, 3♀ (HYL); Yanfeng Village, taken by net, 10.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Hebei, Shanxi, Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Shandong, Hubei, Hunan, Guangdong, Guangxi, Hainan, Sichuan, Guizhou, Yunnan, Hong Kong); Korea, Japan.

NOTES. This species was recorded from Yang County (You *et al.*, 1997; Lu *et al.*, 2018).

***Turanogryllus eous* Bey-Bienko, 1956**

Turanogryllus eous Bey-Bienko, 1956: 221.

Turanogryllus melasinotus Li & Zheng, 1998: 119; **syn. n.**

DISTRIBUTION. China (Shaanxi, Hunan, Shandong, Guangxi); Korea (Gu *et al.*, 2018).

NOTES. This species was firstly recorded from Yang County by Lu *et al.* (2018). The type specimen of *Turanogryllus melasinotus* Li et Zheng, 1998 from Yang County is conspecific with *T. eous* Bey-Bienko, 1956 described from Qingdao (Shandong province). Therefore a new synonymy is established here.

***Velarifictorus (Velarifictorus) micado* (Saussure, 1877)**

MATERIAL EXAMINED. **Shaanxi Province:** Laqigou Village, taken by net, 10.VIII 2017, 1♂, 1♀ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Hebei, Shanxi, Shanghai, Jiangsu, Zhejiang, Fujian, Jiangxi, Shandong, Hunan, Guangdong, Guangxi, Sichuan, Guizhou, Xizang, Taiwan); Vietnam, Indonesia, India, Sri Lanka, Korea, Russian Far East, Japan.

NOTES. This species was recorded from Yang County by You *et al.* (1997).

***Velarifictorus (Velarifictorus) aspersus* (Walker, 1869)**

MATERIAL EXAMINED. **Shaanxi Province:** Caihe Village, light trap, 10.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Hebei, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Henan, Guangdong, Guangxi, Hainan, Sichuan, Guizhou, Yunnan, Hong Kong); Vietnam, India, Pakistan, Sri Lanka, Thailand, Malaysia, Korea, Japan.

NOTES. This species was recorded from Yang County by You *et al.* (1997).

Subfamily Oecanthinae Blandchard, 1845

****Oecanthus longicauda* Matsumura, 1904**

MATERIAL EXAMINED. **Shaanxi Province:** Caihe Villagee, light trap, 10.VIII 2017, 1♂, 1♀ (HYL); Mujia Village, light trap, 03.VIII 2017, 2♀ (HYL); Shuanglong Estuary, taken by net, 10.VIII 2017, 1♀ (HYL); Suwang Village, taken by net, 11.VIII 2017, 1♂ (HYL); Miaoya Bridge, light trap, 26.VIII 2017, 1♀ (HYL); Qingxi Village, taken by net, 26.VIII 2017, 1♂ (HYL); Laqigou Village, taken by net, 10.VIII 2017, 10♂, 7♀ (HYL); Chenjiaping Village, taken by net, 09.VIII 2017, 3♂, 1♀ (HYL); Daxigou Village, taken by net, 10.X 2016, 1♂, 2♀ (Ping Wang).

DISTRIBUTION. China (Shaanxi, Shanxi, Jilin, Heilongjiang, Zhejiang, Fujian, Jiangxi, Hunan, Guangxi, Sichuan, Guizhou, Yunnan, Taiwan); Korea, Japan, Russia (Far East).

Subfamily Podoscirtinae Saussure, 1878

*****Mnesibulus (Mnesibulus) bicolor* (Haan, 1844)**

MATERIAL EXAMINED. **Shaanxi Province:** Guanling Village, taken by net, 10.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Anhui, Jiangxi, Hunan, Hainan, Guizhou, Yunnan); Thailand, Indonesia.

****Truljalia hibinonis hibinonis* (Matsumura, 1919)**

MATERIAL EXAMINED. **Shaanxi province**: Miaoya Bridge, light trap, 26.VIII 2017, 19♂, 7♀ (HYL); Tianxing Village, Markov network, 28.VIII 2017, 1♂ (HYL); Shuanglong Estuary, taken by net, 10.VIII 2017, 1♂ (HYL); Chenjiaping Village, light trap, 09.VIII 2017, 2♂, 1♀ (HYL); Laqigou Village, taken by net, 10.VIII 2017, 1♂, 1♀ (HYL); Chaoyang Village, taken by net, 08.VIII 2017, 1♀ (HYL); Guanling Village, taken by net, 10.VIII 2017, 1♀ (HYL); Yangjiagou, taken by net, 28.VIII 2017, 1♂ (HYL).

DISTRIBUTION. China (Shaanxi, Shanghai, Jiangsu, Zhejiang, Fujian, Jiangxi, Hunan, Guangxi, Sichuan, Yunnan); Japan.

Subfamily Eneopterinae Saussure, 1874

*****Xenogryllus marmoratus marmoratus* (Haan, 1844)**

MATERIAL EXAMINED. **Shaanxi Province**: Shuanglong Estuary, taken by net, 10.VIII 2017, 1♀ (HYL).

DISTRIBUTION. China (Shaanxi, Shanghai, Zhejiang, Anhui, Fujian, Guangxi, Taiwan); Vietnam, Japan, Korea, Myanmar, India.

Family Trigonidiidae Saussure, 1874

Subfamily Nemobiinae Saussure, 1877

****Dianemobius fascipes nigrofasciatus* (Matsumura, 1904)**

MATERIAL EXAMINED. **Shaanxi Province**: Shaojiagou Village, taken by net, 08.VIII 2017, 1♂, 2♀ (HYL).

DISTRIBUTION. China (Shaanxi, Hebei, Beijing, Inner Mongolia, Jilin, Shandong); Japan, Korea, Russia (Siberia, Far East).

NOTES. *Dianemobius nigrofasciatus* (Matsumura, 1904) was synonymized with *D. fascipes* (Walker, 1869) by He (2018), but recently the former taxon is again considered as subspecies of latter (Benediktov & Storozhenko, 2018). The record of *D. fascipes* from Shaanxi Province (Liu *et al.*, 2016) belongs to *D. fascipes nigrofasciatus*.

****Polionemobius taprobanensis* (Walker, 1869)**

MATERIAL EXAMINED. **Shaanxi Province**: Yangjiagou, taken by net, 07.VIII 2017, 4♂, 4♀ (HYL).

DISTRIBUTION. China (Shaanxi, Beijing, Hebei, Inner Mongolia, Liaoning, Jilin, Heilongjiang, Shanghai, Jiangsu, Zhejiang, Fujian, Jiangxi, Shandong, Henan, Hubei, Guangxi, Hainan, Sichuan, Guizhou, Yunnan); India, Sri Lanka, Malaysia, Vietnam, Indonesia, Japan, Korea, Russia (Far East).

****Pteronemobius (Pteronemobius) heydeni concolor* (Walker, 1871)**

MATERIAL EXAMINED. **Shaanxi province**: Yaoping Village, taken by net, 02.VIII 2017, 7♂, 2♀ (HYL); Miaoya Bridge, light trap, 26.VIII 2017, 5♂, 2♀ (HYL).

DISTRIBUTION. China (Shaanxi, Inner Mongolia, Jilin, Hainan, Yunnan, Xizang, Xinjiang); India, Sri Lanka, Malaysia, Indonesia, Vietnam.

Subfamily Trigonidiinae Saussure, 1874

**Metioche pallipes* Stål, 1861

MATERIAL EXAMINED. **Shaanxi province:** Yaoping Village, taken by net, 02.VIII 2017, 1♂ (HYL); Shuanglong Estuary, taken by net, 10.VIII 2017, 1♀ (HYL); Qingxi Village, taken by net, 05.V 2017, 2♂, 3♀ (HYL).

DISTRIBUTION. China (Shaanxi, Hainan); Vietnam, Singapore.

**Svistella bifasciata* (Shiraki, 1911)

MATERIAL EXAMINED. **Shaanxi province:** Miaoya Bridge, light trap, 26.VIII 2017, 1♂, 2♀ (HYL).

DISTRIBUTION. China (Shaanxi, Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Hunan, Hainan, Sichuan, Guizhou, Taiwan); Japan, Korea, Vietnam.

DISCUSSION

The species diversity of crickets of Yang County is relatively rich, now 23 species in 17 genera and 7 subfamilies are known from this region. Sixteen species are recorded from this county for the first time, of them three species as well as the genera *Tarbinskiellus* Gorochov, 1983, *Mnesibulus* Stål, 1877 and *Xenogryllus* Bolívar, 1890 are new for Shaanxi province of China.

Beyond 23 species listed in present paper, there are 11 species of crickets known from other counties of Shaanxi province: *Qinggryllus striofemorus* Chen et Zheng, 1995, *Teleogryllus occipitalis* (Serville, 1838), *Teleogryllus infernalis* (Saussure, 1877), *Pteronemobius taibaiensis* Deng et Xu, 2006, *Trigonidium cicindeloides* Rambur, 1883, *Svercacheta siamensis* (Chopard, 1961), *Velarifictorus ornatus* (Shiraki, 1911), *Loxoblemmus angulatus* Bey-Bienko, 1956, *Sclerogryllus punctatus* (Brunner von Wattenwyl, 1893) *Goniogryllus sexflorus* Xie et Zheng, 2003, and *Truljalia panda* Ma et Zhang, 2015. (Chen & Zheng 1995, 1996; You *et al.*, 1997; Li & Zheng, 1998; Xie & Zheng, 2003; Xie, 2005; Ma & Zhang, 2015; Lu *et al.*, 2018). Totally 14 species in 8 genera, 4 subfamily and 2 family of Grylloidea are recorded from Shaanxi province (He, 2018). Based on our systematic summary, there should be 34 species in 22 genera, 8 subfamilies and 2 families of crickets in Shaanxi Province (Table 1).

Moreover, the genus *Qinggryllus* Chen et Zheng, 1995 is considered as junior synonym of *Goniogryllus* Chopard, 1936 (He, 2018). We think it is necessary to restore the taxonomic status of the genus *Qinggryllus* nom. resurr., because the two genera have different habitus and habitats (Liu *et al.*, 2017).

Recently, the list of crickets from Hunan Province, China was published (Gu *et al.*, 2018), and we compared it with fauna of Shaanxi province using the modern classification system of Orthoptera (Cigliano *et al.*, 2018). In both provinces the subfamily Gryllinae has the highest diversity, namely 20 species in 8–10 genera (Table 1). There are 3–5 species of subfamilies Podoscrirtinae, Trigonidiinae and Nemobiinae in both provinces. Subfamilies Eneopterinae and Sclerogryllinae represent by the same single species each. At the same time, the biggest difference is the lack in Shaanxi province the subfamilies Pentacentrinae and Cachoplistinae, which are mainly distributed in the subtropical and tropical regions. Shaanxi province is a medium-sized region in China with 107 counties. We believe that more crickets will be found in Shaanxi during further investigation.

Table 1. Composition of the fauna of Grylloidea in Shaanxi and Hunan provinces, China.

Taxa	Shaanxi province		Hunan province	
	Number of genera	Number of species	Number of genera	Number of species
Gryllidae	16	27	19	33
Eneopterinae	1	1	1	1
Euscyrtinae	1	1	3	3
Gryllinae	10	20	8	20
Oecanthinae	1	1	1	2
Pentacentrinae	0	0	1	1
Podoscirtinae	2	3	4	5
Sclerogryllinae	1	1	1	1
Trigonidiidae	6	7	7	9
Trigonidiinae	3	3	4	5
Nemobiinae	3	4	3	4
Phalangopsidae	0	0	1	1
Cachoplistinae	0	0	1	1
Total:	22	34	27	43

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